REMARKS

By this response, Applicants have amended claims 11-12 and 33. As a result, claims 11-12, 14 and 21-38 remain pending in this application. These amendments are being made to facilitate early allowance of the presently claimed subject matter. Applicants do not acquiesce in the correctness of the objections and rejections and reserve the right to pursue the full scope of the subject matter of the original claims, or claims that are potentially broader in scope, in the current and/or a related patent application. Reconsideration in view of the following remarks is respectfully requested.

In the Office Action, the Office rejects claims 11, 21, and 22 under 35 U.S.C. § 102(b) as allegedly being anticipated by German Patent Publication DE 100 32 062 A1 (Mueller). In the Office Action, the Office relies on Figs. 2A, 3A, and 4 of Mueller as allegedly disclosing the claimed inventions. Further, the Office relies on Schalwig et al., "Gas sensitive GaN/AlGaN-heterostructures", Sensors and Actuators, B 87 (2002), pp. 425-30 (Schalwig) for an English language translation of the German Publication. However, Applicants note that the device discussed in Schalwig is different from the devices shown in Figs. 2A, 3A, and 4 of Mueller. For example, the device in Schalwig does not include an insulating layer between the gate and the GaN layer. See, e.g., Schalwig, Fig. 1, Mueller, Figs. 2A, 3A, and 4. To this extent, the respective devices will operate differently. As a result, Applicants respectfully submit that it is improper for the Office to rely on Schalwig as a discussion of Mueller.

Regardless, Applicants have amended claim 11 to expressly state that the dielectric layer extends beyond the gate contact to the source contact and the drain contact. In contrast, Mueller's insulating layer does not extend beyond the gate contact. Mueller, Figs. 2A-B, 3A-B,

4. Further, Applicants note that Schalwig (provided for publication on 24 April 2002) is a more recent reference than Mueller (filed 1 July 2000). In Schalwig's device, no insulating layer is present. Schalwig, Fig. 1. To this extent, the combination of Mueller and Schalwig teaches away from the use of the claimed dielectric layer.

In light of the above-stated reasons, Applicants respectfully request withdrawal of the rejections of claim 11 and claims 21-22, which depend therefrom, as allegedly being anticipated by Mueller.

Further, the Office rejects claims 12, 14, and 23-38 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Mueller (as allegedly translated by Schalwig) in view of U.S. Patent No. 5,874,047 (Schoening). Initially, Applicants reiterate that since Mueller and Schalwig discuss different devices, it is improper for the Office to rely on Schalwig as an English language translation of Mueller.

Additionally, Applicants respectfully submit that the Office fails, *inter alia*, to show that Mueller and Schoening teach or suggest each of the claimed features. For example, with respect to claims 23 and 33, the Office acknowledges that Mueller fails to disclose the claimed at least one perforation. Office Action, p. 3. In support of its rejection, the Office cites Fig. 3 of Schoening as allegedly teaching at least one perforation. Office Action, p. 4. In particular, the Office states that "gate electrode has perforations 3 to access the substrate 2." *Id.*

However, Applicants note that reference 3 of Schoening refers to a "sponge or foam structure", which comprises "the sensor-active components 5." See, e.g., Schoening, col. 6, lines 22-28. To this extent, Fig. 3 of Schoening does not disclose perforations to access the substrate as alleged by the Office. Rather, Fig. 3 of Schoening discloses the inclusion of the sensor-active

components in the gate region. In fact, as shown in Fig. 4A , Schoening deposits a metal film 17 in the pore structure, which would prevent substrate 2 from contacting any medium below the gate region. Schoening, col. 7, lines 60-66. Further, Schoening uses a protective layer 12 "so that only the sensor active gate region can contact the anolyte solution." Schoening, col. 7, lines 38-42. As a result, Applicants respectfully submit that Schoening fails to disclose a gate electrode having perforations to access a substrate as alleged by the Office.

Additionally, to the extent that the gate region in Schoening enables the sensor-active components to contact the anolyte solution, Applicants note that the sensor-active components are not exposed to a medium in an area below the gate region as in the claimed invention. Rather, Schoening teaches exposing the sensor-active components within the gate area.

Additionally, Applicants note that the devices of Mueller and Schoening are substantially different. In particular, Mueller's device comprises a sequence of semiconductor layers, which are formed from a group III nitride heterostructure. Mueller, Abstract. In sharp contrast, Schoening's device comprises a silicon-based sensor. Schoening, Abstract. To this extent, Applicants respectfully submit that one of ordinary skill in the art would not be motivated to look to the teachings of Schoening to modify Mueller since operation of the respective devices substantially differ.

In light of the above, Applicants respectfully submit that the Office has failed to show that a person of ordinary skill in the art would obtain Applicants' claimed invention based on the combined teachings of Mueller and Schoening. As a result, Applicants respectfully request withdrawal of the rejections of claims 23 and 33 and claims 24-32 and 34-38, which respectively depend therefrom, as allegedly being unpatentable over Mueller in view of Schoening.

Applicants submit that each of the pending claims is patentable for one or more additional unique features. To this extent, Applicants do not acquiesce to the Office's interpretation of the claimed subject matter or the references used in rejecting the claimed subject matter. Additionally, Applicants do not acquiesce to the Office's combinations and modifications of the various references or the motives cited for such combinations and modifications. These features and the appropriateness of the Office's combinations and modifications have not been separately addressed herein for brevity. However, Applicants reserve the right to present such arguments in a later response should one be necessary.

In light of the above, Applicants respectfully submit that all claims are in condition for allowance. Should the Examiner require anything further to place the application in better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the number listed below.

Respectfully submitted,

/John LaBatt/

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